NPDES PERMITTING INFORMATION PAPER FOR APPLICATION OF EPA METHOD 1631 FOR MERCURY

Due to the ubiquitous nature of mercury, Indiana's fish tissue analyses, and the emergent availability of laboratories that can perform EPA Method 1631 analyses, IDEM addresses low level mercury concerns in NPDES permits in the following ways:

SHORT TERM

The goal is to continue issuing NPDES permits in a timely manner and address short-term compliance issues. Under some circumstances as supported by rules, it would be beneficial to include mercury limits or monitoring in existing and new NPDES permits. Compliance schedules (either 3-year or 5-year terms) are available for existing facilities. The permit may include a reopener clause allowing the permit to be modified to reduce mercury monitoring frequency or to grant a variance.

LONG TERM

The long term goal is to revise the water quality rules to establish a state-wide variance from mercury standards. The state-wide variance would be a streamlined process and will require a showing that the variance is needed and the implementation of a mercury minimization program before being granted. This rule revision is expected to be completed before the end of 2004.

FREQUENTLY ASKED QUESTIONS

- Who do I contact about mercury issues in my permit?

Mr. Lonnie Brumfield, Senior Consultant at (317) 233-2547 or email at lbrumfie@dem.state.in.us

- What commercial labs conduct low level mercury analysis in Indiana?

Currently, IDEM is not aware of any commercial laboratory within the state that is conducting EPA Method 1631 analysis in-house. Laboratories are available outside Indiana. As mercury monitoring becomes more common, in-state commercial labs may deem it economically feasible to begin offering this procedure. IDEM will notify Indiana's commercial labs of the potential interest in mercury monitoring. IDEM will develop and maintain a list of laboratories in Indiana and neighboring states that perform EPA Method 1631.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF WATER QUALITY

NPDES Permitting and Mercury

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CONCERNS

1. Mercury is a toxic metal. It is harmful to human life, aquatic life and wildlife.

2. Mercury is a neurotoxin that, if ingested in significant quantities, can affect the human nervous system limiting the ability to walk, talk, see or otherwise function.

3. Mercury has a high bioconcentration and bioaccumulation rate, which means it concentrates in animal tissue and accumulates up the food chain.

4. Mercury is a major reason there are fish consumption advisories on most streams in Indiana. Fish consumption advisories recommend limitations in the consumption of fish by adult males and females, pregnant and nursing mothers, women of childbearing age and children.

COMMON SOURCES AFFECTING SURFACE WATERS

1. Coal combustion via air deposition.

2. Wastewater discharge from sewage treatment plants and industrial plants.

3. Storm water runoff.

10 MAJOR NPDES PERMITTING ISSUES FACED BY IDEM

1. Based on a limited number of fish tissue analyses, mercury appears to be present in many of Indiana's surface waters. A number of surface waters have been listed as impaired in Indiana's 303(d) list due to fish tissue data analyses that resulted in fish consumption advisories related to mercury pollution.

2. On January 12, 2001, EPA and the Food and Drug Administration (FDA) issued concurrent national fish consumption advisories recommending restricted consumption of freshwater, coastal and marine species of fish due to methyl mercury contamination.

3. EPA Method 1631 can detect mercury at levels below water quality standards.

4. Prior to the availability of this Method, it was not possible to enforce low level mercury limits due to detection limits that were above most water quality standards.

5. Based on national mercury effluent data, a large number of NPDES permitted facilities in Indiana may have mercury in their effluent and therefore have a reasonable potential to exceed mercury water quality standards.

6. At the present time, the treatment technology to remove mercury from waste water at the end-of-pipe may prove to be an economic hardship for most permitted facilities.

7. Municipalities have limited control of the mercury content in the waste waters that enters their treatment plants.

8. Mercury is found in many common domestic items, such as food coloring and human excrements which go down the sewer to the sewage treatment plant.

9. Limited surface water quality data in Indiana indicate that the ambient mercury concentrations usually exceed the mercury wildlife water quality standard of 1.3 ng/l (i.e. parts per trillion), the most stringent water quality standard.

10. Mercury pollution minimization programs may have a certain amount of effectiveness, as reported in a recent study conducted by the Association of Metropolitan Sewerage Agencies (AMSA) (www.amsa-cleanwater.org)